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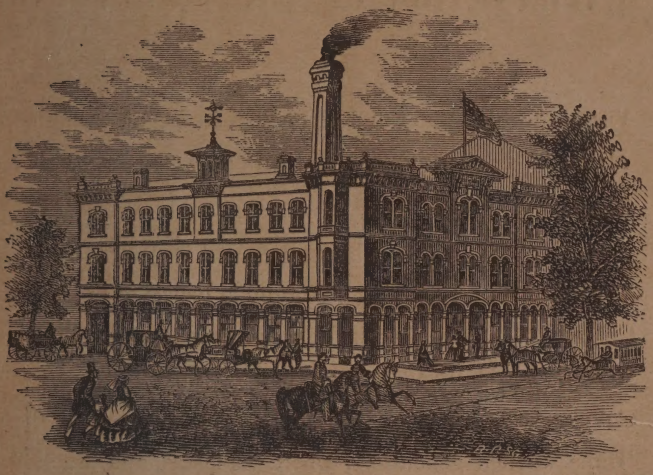
Boston Wheat and Bread Co.



IMPROVED

8007.127

AERATED BREAD.

DR. DAUGLISH'S SYSTEM.

WITH AN ACCOUNT AND DESCRIPTIVE DRAWINGS OF THE RECENTLY PATENTED APPARATUS FOR VESICULATING AND FORMING THE LOAF, &c.

OPINIONS OF THE PRESS, &c.

BOSTON:

PUBLISHED BY THE BOSTON WHEAT AND BREAD COMPANY,

CHIEF OFFICE, 1010 WASHINGTON, CORNER CONCORD STREET.

Branch Offices:

12 CANAL, AND 10 MERRIMAC STREETS, HAYMARKET SQUARE.

1866.

EXPLANATION OF THE ENGRAVING.

A Vessel in which water and carbonic acid gas are combined.

B Mixer, in which flour, salt, and aerated water are combined.

C Receiver of dough to be vesiculated and formed into loaves while another batch is being prepared in Mixer (B).

D Apparatus for vesiculating and forming loaves of uniform weight.

E Column for condensing air for promoting the "piled elastic texture" of the bread, in combination with apparatus (D).

F Column for condensing carbonic acid gas for aerating the water.

G Three wooden generators, where molasses and water are fermented to produce the carbonic acid gas.

H Receiver of carbonic acid gas from the generators (G).

K Steam-boiler, for supplying the engine which pumps the air and carbonic acid gas, and kneads the dough.

L Engine and pumps.

M Vacuum and pressure gauges.

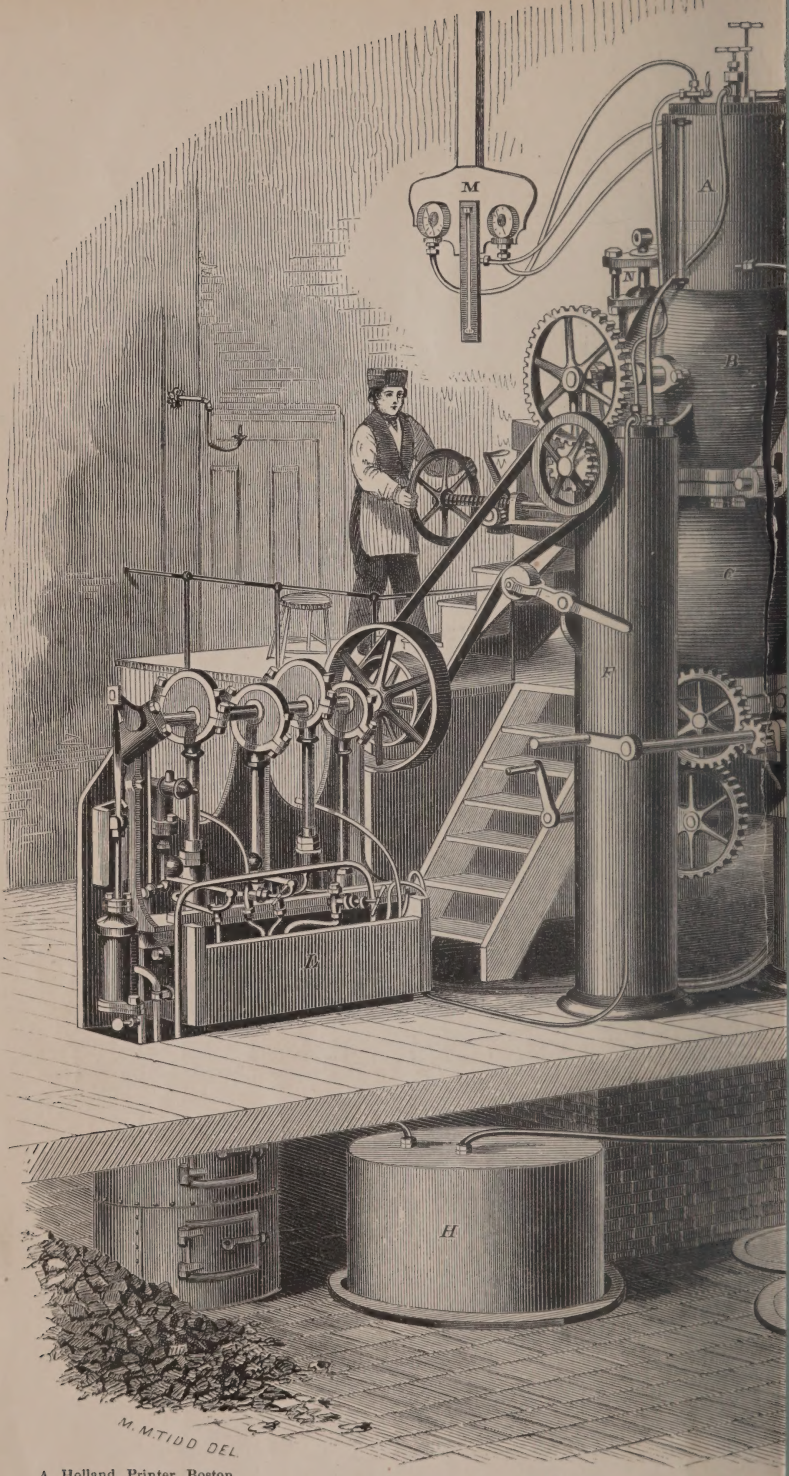
N Opening for introducing flour and salt.

O New revolving oven (patent pending).

NOTE.

Hitherto, in the manufacture of Aerated Bread, it has been customary to mix the dough in a closed vessel, in which is condensed atmosphere amounting, in some instances, to a pressure of one hundred and sixty to one hundred and eighty pounds on the square inch; and, after the mixing has been completed, to discharge the dough from the mixer through certain regulated apertures into open baking-pans, by means of the pressure of the condensed atmosphere within. During this operation, a great expansion of the dough takes place suddenly, and, in consequence, the desired vesicular structure of the dough is injured, and its quality for bread-making materially impaired.

(See third page of cover.)



A. Holland, Printer, Boston.

INTERIOR OF AN AERA

Under Patents of Dr. I

H. Marsh, Engraver.

EAD MANUFACTORY,

Dauglish, London.

BOSTON

WHEAT AND BREAD COMPANY,

Incorporated by the Commonwealth of Massachusetts, May 9, 1865,

FOR THE MANUFACTURE OF

Flour, Bread, and Bread Machinery.

Authorized Capital, $500,000.

8007.127

S. T. BACON, PRESIDENT. T. D. BOND, TREASURER.

DIRECTORS.

HON. WILLIAM SPRAGUE, U.S.S. | LYMAN B. FRIEZE.
JOHN A. GARDNER. | TIMOTHY D. BOND.
STEUBEN T. BACON.

Chief Office, 1010 Washington, corner Concord Street.

Branch Offices, 12 Canal, and 10 Merrimac Streets, Haymarket Square.

BOSTON.

The Company take pleasure in announcing, that negotiations have been concluded with TIMOTHY D. BOND, Esq., by which the manufacture of this Bread, and the world-renowned "T. D. BOND CRACKER," are united, insuring hereafter the same degree of judgment and skill in the bread department as is manifest has been imparted to that of the crackers. (See Mr. Bond's card, p. 24.)

Additional to the manufacture of bread and crackers, the Company propose to sell or license individuals or public companies, rights, together with requisite machinery and apparatus, under the patents, &c., owned by them, to manufacture this Bread in all the cities of the United States.

Applications for rights are now solicited.

Entered, according to Act of Congress, in the year 1866,

By the Boston Wheat and Bread Company,

In the Clerk's Office of the District Court of the District of Massachusetts.

From 7.6.1.5.
Nov. 16, 1869.

Press of Geo. C. Rand & Avery, 3 Cornhill, Boston.

THE

IMPROVED AERATED BREAD

MANUFACTURE IN THE UNITED STATES BY THE SYSTEM OF

JOHN DAUGLISH, M.D.,

OF LONDON.

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

The manufacture of "AERATED BREAD" by forcing pure carbonic acid gas into the dough instead of producing the gas by the fermentation of the dough itself, or by the action of chemicals such as soda and cream of tartar, ammonia, &c., has been for a number of years the subject of experiment. The advantage of such a method, in combination with improved machinery for kneading, forming the loaves and baking without the necessity of manual labor, is evident. Entire uniformity in the bread produced, economy in various ways, the most perfect cleanliness and system, are among the important results justly to be expected from a successful application of so simple a plan.

But simple as the plan itself is, not a few unforeseen difficulties were encountered in the attempts made by various ingenious persons to reduce it to practical application, and make it commercially successful. Both in America and in England, the skill and science of inventors were tested in these efforts. Plans were drawn, machinery constructed, and patents obtained under which bread was made and put into the market in competition with the products of the old-fashioned bake-houses. But, in spite of the best skill which could be applied, the aerated bread in almost every instance failed to satisfy the public taste. Besides some minor faults, the bread possessed a peculiar taste, apparently unavoidable because

its source was untraceable, which rendered it unsatisfactory and unsaleable. It was not until the system of Dr. Dauglish, an ingenious and scientific English inventor also distinguished for his medical skill, was perfected, that aerated bread was produced capable of competing successfully with the ordinary article in its sensible properties of taste and smell. When this was done, the success of the new system was secure; for, while it was now able to attain perfectly those essential points, it possessed advantages in other directions that no bread of ordinary manufacture could lay claim to. For an enumeration of these advantages, reference is made to another portion of this pamphlet (p. 9).

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

DR. DAUGLISH'S PROCESS OF MANUFACTURING THE IMPROVED AERATED BREAD.

A brief description of this beautiful and simple system of converting pure flour into perfect and wholesome loaves without the intervention of hand labor, will be found interesting.

The idea with which Dr. Dauglish set out, the problem he sought to solve, was to make the mixture of flour and water spongy without exciting fermentation in the dough, and without the addition of chemicals. After several years of costly and often disappointing experiment, by the exercise of energy, patience and science, this was successfully accomplished.

The process of manufacture is as follows: The flour, of the best quality, is first taken from the barrels and sifted by machinery. It is then conveyed on a railway, in a small car, to the mixer, a strong globular vessel of gun-metal capable of holding two or three barrels of flour, and, being introduced therein, and a suitable proportion of salt added, the lid is firmly closed. The mixer is fitted with a gauge in a manner similar to steam boilers, for ascertaining the degree of pressure. Filtered water in suitable proportion is introduced into another part of the machine, and the air contained in the water and flour is then exhausted by an air pump, worked by a steam engine. When this is effected, which requires but a few minutes, pure carbonic acid gas produced

by any suitable process, — usually by the fermentation of molasses, — is forced into the mixer and the water vessel by appropriate pumps, until the gauge indicates a pressure of two atmospheres. The water is then admitted to the flour, a kneading fan within the mixer is set to work, and the mixing is easily and rapidly effected. From three to six minutes, according to the kind of wheat from which the flour is made, are required for this operation. Flour rich in gluten (such as, for instance, the "Haxall" and other famous Richmond brands) requires less kneading than flour otherwise of equal quality from different wheat. After the mixing has been completed the kneading fan is stopped, and the dough is ready to be made into loaves and conveyed to the oven. This is effected by means of an ingenious machine attached to the lower part of the mixer, which receives the dough, and, through a valve, places in the pans the exact quantity for each loaf. At this juncture a most important feature of the process occurs, that of vesiculation, by which the "piled elastic texture" is imparted to the dough. This is rapidly accomplished by a simple compression of air within each baking pan before it receives the dough from the measuring valve. When the bread is baked it is packed in baskets, and in these conveyed to the wagons, from which it is delivered to purchasers. By this method, as is easily seen, from the first removal of the flour from the barrels to the packing of the loaves for delivery, neither the materials nor the bread are touched by hand.

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

DR. DAUGLISH'S IMPROVED AERATED BREAD COMPARED WITH AERATED BREAD MADE UNDER THE AMERICAN SYSTEM.

The Improved Aerated Bread supasses that made by the American system in being more perfectly vesiculated, and consequently lighter; in having a thinner, smoother, and softer crust, and a more uniform crumb; but especially in being entirely free from any odor or taste differing from that of the best home-made bread. Upon this point it is only necessary to make a single trial to be satisfied.

IMPROVED AERATED BREAD COMPARED WITH DOMESTIC FERMENTED BREAD.

1st, Dr. Dauglish's process is scientifically accurate, and in no degree dependent upon chance or individual judgement and skill.

2d, Consequently the bread is of uniform quality, — no waste, no uncertainty, no disappointment, attend its manufacture.

3d, It is not fermented; therefore it undergoes no chemical changes, does not sour, and needs no correctives, such as saleratus, soda, &c., to sweeten it.

4th, Its baking, like its manufacture, is uniform; its crust being smooth and of a uniform thickness and color.

5th, Unlike all fermented bread, no chemical changes take place in aerated bread, either before or after baking. It therefore remains soft and palatable for many days; and, when it finally becomes dry, it may be restored to its original freshness by the simple application of moisture and heat. It also makes a superior toast.

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

IMPROVED AERATED BREAD COMPARED WITH ORDINARY BAKER'S BREAD.

1st, *Cleanliness.* Instead of the dough being mixed with naked arms or feet, oftener than not reeking with perspiration and otherwise unclean, this bread, from the opening of the barrel to the delivery of the loaves, is not, and scarcely can be, touched by any one.

2d, *Rapidity of Manufacture.* An hour suffices for the conversion of the flour into thirteen hundred and forty-four baked loaves; whereas, in the ordinary process, several hours are occupied in the formation of the sponge alone, and a farther time in the kneading, raising, and baking of the dough.

3d, *Purity.* With many kinds of flour, perfectly good and wholesome, in the process of fermenting the dough on the old plan, which is uncertain and tedious, a considerable portion of the starch contained in the flour is first transformed into dextrine, and

then gradually into grape-sugar or glucose. If the fermentation is still continued, the glucose is converted into alcohol, which soon escapes from the dough with carbonic acid, and is lost. The consequence is, the dough becomes sodden, and the bread, when baked, is heavy, dark-colored, and unfit for use. To conceal these defects, as well as certain properties in damaged or inferior flour, the fraudulent baker, and sometimes the miller before him, usually adds a considerable quantity of alum; not only with the intention of producing a white, spongy bread, but for destroying the acidity of the flour, and enabling the dough to "carry more water." Blue vitriol (sulphate of copper) is also sometimes added to absorb more water. The practice of boiling rice, or rice-flour, with water, and then gradually adding a limited supply of wheaten flour, with the object of surcharging the bread with an excess of moisture, is adopted by some bakers, the flour thus treated yielding fully fifty per cent, by weight, more bread than when merely mixed with water and yeast. Bread, in many instances, made on this plan, has been known to possess only about two-thirds the amount of nutriment it would, had it been made by honest means. Such bread, or that containing an excess of water, rapidly becomes mouldy and sour, and, when eaten, is apt to derange the digestive functions of children as well as of adults. Again, carbonates of soda, potash, and magnesia are added to flour for rectifying or lessening the effects of bad harvesting, improper storing, &c. These chemicals are also used in conjunction with tartaric acid, arrow-root, rice-flour, and other materials, in the form of "baking powders," for the purpose of quickly raising the bread, without waiting for the more slow operation by the use of ferment. These practices, to be sure, are not seriously objectionable for *temporary use;* but when these alkalies and acids are daily used in making bread, it is held by experienced physicians that their effect is injurious. It is needless to enlarge on the unwholesomeness of such adulterations.

In operating by Dr. Dauglish's process there is no time for the change spoken of to occur. No fermentation takes place, and consequently there is no advantage in or necessity of resorting to such means.

4th, *Uniformity.* With the greatest skill and experience it is not always that fermented bread can be made at all times alike. Differences in the flour, in the atmosphere, and in the ferment, are such as frequently to defeat success; and consequently baker's bread

is not unfrequently sour, or otherwise ill-tasting, and more or less unfit for use.

5th, *Wholesomeness.* Chemical analysis shows that in the process of fermentation the materials of bread undergo more or less deterioration. Experience shows, too, that baker's bread is often difficult of digestion, causing acidity of the stomach and distress, even when it contains no alum or other improper ingredients. Reference to the certificates of distinguished chemists and physicians, as well as the test of use, will satisfy any one of the remarkable wholesomeness and digestibility of aerated bread.

6th, *Keeping Properties.* Baker's bread dries rapidly, and after a single day is incapable of being restored to a fresh state, and in certain states of the weather often quickly moulds. The aerated bread is even better the second than the first day, and keeps perfectly soft and fresh for a much longer time than even the best domestic bread.

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

THE IMPROVED AERATED BREAD AS A DIET.

There are many persons with whom bread does not agree. The instinct or sympathy of the stomach — and this instinct is more marked in a debilitated organ than in a healthy one — is a beautiful provision of nature. Without any aid from the mental faculties this remarkable monitor will discover the food which produces it inconvenience, and through the appetite reject it. In many cases individuals will say they eat but little bread, they hardly know why.

Infants and young children fed upon fermented bread and milk often do not thrive, and finally, the diet not being changed, reject it partially or altogether, waste away, and often die. Instinct, not reason, in these little ones cries out against a food upon which they cannot subsist. The remains of yeast left active in this bread set up fermentation in the stomach and bowels both of children and feeble adults, producing flatulency, acidity, griping, diarrhœa, and cholera morbus. Dr. Dauglish says, "Some dogs that would not touch fermented bread will eat the aerated with avidity. My little girl told me with great glee that her pet cat was very fond of the aerated bread, but that she would not touch the fermented." In all these cases instinct seems evidently to show a repugnance

to food productive of fermentation. Experience has repeatedly demonstrated, that where, in cases like those mentioned above, children and adults have rejected fermented bread, the unfermented or aerated bread has been found to agree perfectly. Experienced physicians, as well as their patients, confirm the fact that dyspeptics, who have been unable to breakfast for years, can make a hearty meal of aerated bread without inconvenience. Individuals who suffer with acidity, heartburn, and flatulence after meals, and who seek relief by taking soda, magnesia, ginger, &c., are relieved by discontinuing fermented, and using aerated bread. Most medical men object to the use of fermented bread in cases of weak digestion. Under such circumstances the aerated bread becomes a great boon. In England this bread is extensively adopted in hospitals, to the exclusion of fermented bread, and the reports of hospital authorities are in the highest degree favorable as to its comparative nutritive and digestive qualities. The patients themselves express a decided preference for the aerated bread.

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

SUMMARY OF THE ADVANTAGES POSSESSED BY THE IMPROVED AERATED BREAD MADE UNDER DR. DAUGLISH'S SYSTEM.

1st, It is a great improvement over the old *Aerated Bread*, being free from all distasteful flavor, and every way more delicate, lighter, softer, and more palatable.

2d, It is perfectly *clean*, being neither mixed nor moulded by hand, but wholly made by machinery.

3d, It is perfectly *pure and unadulterated*, being made wholly from the best wheaten flour, water, and salt, without yeast, alum, saleratus, or any other adulteration, the rising being effected by the use of carbonic acid gas, obtained from molasses, grapes, fruit, &c.

4th, It is very delicate in its texture, and therefore easily soluble in water, milk, or the digestive fluids of the stomach and alimentary canal. For this reason it is also eminently adapted to the various uses to which bread is applied.

5th, Its taste or flavor is simple, sweet, and agreeable, wholly free from the bitterness and acidity so often characteristic of all kinds of fermented bread.

6th, It may be eaten *fresh* with impunity, even by invalids, and it may also be kept without deterioration for many days.

7th, It is strongly recommended by eminent chemists for its purity, and by the most distinguished physicians in Europe and America for its digestibility and its high nutritive value, both to invalids and persons in health.

8th. It is economical in all its uses, and is the CHEAPEST BREAD THAT IS MADE.

The Improved Aerated Bread is always soft, sweet, pure, palatable, and free from any peculiar odor or taste.

OPINIONS OF SCIENTIFIC MEN, CHEMISTS, AND PHYSICIANS IN REGARD TO DR. DAUGLISH'S IMPROVED AERATED BREAD.

Opinion of Dr. A. A. Hayes, State Assayer: —

AERATED BREAD. — A most successful application of science to a manufacture which was before remarkable for its uncertainty, its deficiencies, and for the variety of imperfect methods adopted, comes to us as a great improvement, destined to work a salutary change in subsistence and public health.

The Manufactory of the Boston Wheat and Bread Company in this city is a model of simplicity and efficiency, of cleanliness and order, rarely seen, where both mechanical and chemical processes are applied to insure results entirely under control as regards certainty in quality and quantity. In this establishment can be seen the purification of flour before it is mixed with filtered water and a little salt to form a paste. This paste is immediately kneaded in a clean metallic vessel, by machinery, having previously been impregnated under pressure with the purified gas arising from the fermentation of molasses or syrup contained in closed vessels. By the use of this gas (carbonic acid), the object which has hitherto been sought after by the use of leaven, yeast, baking powders, and other means, without leaving those objectionable and often filthy residues common in bread made by such means, is accomplished. It is a very important point in this connection, that the new process dispenses with the use of mineral acids and salts of all kinds in forming the sponge, securing the result, indeed, by the usual agent, but using the gaseous parts only, free from the substances from which they are generated.

As the dough of the bread is raised by mechanical action, while only the pure gaseous exhalations of fermenting sugar are present, no acetic or putrefactive change in the flour or in the dough is induced, nor are the sugar and flesh-forming parts of the flour wasted in the act of making the sponge. The weight of the loaves and the baking are exactly graduated; during the baking the gas wholly passes off, and the bread produced is not only free from any unpleasant odor or taste, but the mode of production confers on it an indisposition to become sour or unpalatable even after several days exposure to the air. Its sweetness and flavor are those pertaining to the flour, while its perfect sponge adapts it to the most feeble digestive powers. The whole nutritive matter of the flour remains undiminished in the bread. It is re-

markable for its texture, the delicacy of the crumbs formed from it, and for its adaptability for making toast, or secondary cooking in any way. Those who have seen the ordinary manufacture of bread will duly estimate the fact that clean or unclean hands do not come in contact with the materials or the bread at any stage of the manufacture, and that cleanliness and system are pervading features in every part of the establishment. The choice of bread is to a certain extent a matter of taste; and those who relish the sourness or bitterness of bread retaining beer yeast will miss these impurities in the aerated bread, which is undoubtedly the nearest approach to a perfect bread which has yet been manufactured.

Respectfully,

A. A. HAYES, M.D., State Assayer.

20 STATE ST., BOSTON, March 1, 1866.

Certificate of Dr. Chas. T. Jackson, Consulting Chemist and State Assayer.

STATE ASSAYER'S OFFICE, 33 SOMERSET ST.,
BOSTON, March 3, 1866.

I hereby certify that I have made a full and careful examination of all the materials, apparatus, and processes employed in the Boston Wheat and Bread Company's establishment. I am fully informed respecting the whole method of operating, and the nature of every article used in their manufacture of aerated bread, having witnessed the same with great satisfaction.

I will therefore state, for the information of the public, that only flour, salt, and filtered water are used to form the dough, which, after being impregnated with carbonic acid gas generated by the fermentation of molasses in a separate apparatus and condensed into the dough under pressure, is then mixed by the aid of machinery. This gas, when relieved of pressure, by its elasticity makes the dough light and spongy; operating in the same way that the carbonic acid gas generated by the decomposition of part of the flour does in the ordinary fermented bread. Since in aerated bread no portion of the flour is sacrificed for the production of this gas, so much is saved as food. No chemical agent of any kind, or injurious or unwholesome substance, is introduced into this bread. From the time the flour is emptied from the barrel until the bread reaches the table for delivery, no human hand touches it in any of its stages of preparation; and, the work being done in closed vessels, it is impossible for any dust or foreign matter to be by any accident introduced into the dough or bread. Absolute cleanliness and rapidity of production are very attractive features of this method of bread-making, and uniformity of results is also certain. It only requires one hour to sift, knead, aerate (or raise), and bake four barrels of flour. This sudden transition of pure flour, salt, and water into baked loaves allows no time in which it can undergo the fermentative changes which the ordinary process involves. I cannot conceive of a more cleanly, nutritious, or healthful bread than is elaborated by this process. Dyspeptic people, and those having delicate digestive organs, who cannot eat fermented bread, must hail the advent of the aerated or unleavened bread with delight. Bakers who visit the establisment will not fail to learn a lesson in neatness and cleanliness, which I know, of my own observation, too many of them very much need.

CHARLES T. JACKSON, M.D.,
Consulting Chemist and State Assayer.

From Dr. Jas. R. Nichols, Manufacturing Chemist.

No. 150, Congress St., Boston, March 5, 1866.

Boston Wheat and Bread Co., *Gentlemen*, — I have been much interested in the improvements introduced into your establishment in the manufacture of aerated bread. In securing the gaseous product resulting from the vinous fermentation of saccharine substances, you not only utilize a waste product, but remove all possible prejudice on the part of the public in the use of the carbonic acid gas as derived from ordinary substances.

You are enabled to declare to the consumers of your aerated bread, that no acids or corbonates of any kind enter your bakery, and that no substances but pure flour, water, salt, and the gas as obtained from molasses, grapes, or fruit are employed, either directly or indirectly, in the production of your delicious bread. I have used it in my family with much satisfaction, and, from a full knowledge of the chemistry of bread-making, have no hesitation in saying that your method is most perfect. The superiority you claim for this bread as regards digestibility, retention of moisture, &c., is well founded; and it cannot fail of meeting with a large demand.

Very respectfully,

Jas. R. Nichols, Chemist.

From Thomas H. Hoskins, M.D., Author of "What we Eat; a Treatise on the Adulteration of Food," &c.

868 Washington Street, Boston,
March 5, 1866.

It gives me pleasure to testify, after a thorough and repeated examination of the Boston Wheat and Bread Company's Works, studying the theory and practice of bread-making by the aerating process, and the application of machinery in the place of manual labor, that nothing could be more perfect and complete than the manner in which the work of manufacturing bread is there carried out, or more thoroughly satisfactory than the results attained. No possibility of contamination, no temptation to adulteration, no uncertainty in the processes, exists in making bread by the method of Dr. Dauglish, conducted as it is by means of the latest improvements in bread-machinery as elaborated by that most ingenious inventor, and approved by the highest chemical, sanitary, and medical authorities of Great Britain.

As to the bread itself, it needs but a trial to establish its character in any family upon whose table properly-made bread is appreciated. There can be no mistake as to the superior nutritive value and greater digestibility of Dr. Dauglish's bread. In that branch of medical practice to which my principal attention has been given, — the diseases of children, — I have already found the aerated bread an unquestionable boon. Repeatedly I have seen children, by a mere change of diet from fermented to aerated bread, relieved of gastric and intestinal irritation, recover their color and animation, and become, in short, restored to health; and, this without the least medication, but simply through the avoidance of fermentable diet, and the substitution therefor of a simple and quickly-digested food.

I can therefore warmly congratulate the citizens of Boston upon the success of an enterprise which insures them the staff of life in so perfect a form, in place of the impure and too frequently adulterated and most unwholesome bread manufactured by the ordinary method.

Th. H. Hoskins, M.D.

From L. A. Cutler, Esq., Superintendent Boston City Hospital.

BOSTON CITY HOSPITAL, March 6, 1866.

BOSTON WHEAT AND BREAD COMPANY. *Gentlemen,* — Some time since my attention was called to your Improved Aerated Bread, and for the last eight months I have been using it in the Hospital in connection with the common baker's bread.

I feel it a pleasure to express my entire satisfaction as regards its quality and economy. It comes much nearer the domestic bread than any we have used, and I think, before long, I shall find it for the interest of the institution to adopt it wholly.

Yours very respectfully,

L. A. CUTLER, Supt.

From Rev. A. L. Stone, D.D.

BOSTON, Jan. 20, 1866.

MY DEAR MR. BACON, — Our morning loaf from your oven is now quite indispensable to the comfort of the household. It is invariably sweet, light, and spongy, and rather casts our domestic baking, of which we have been somewhat proud, into the shade. I confess I am surprised at the *uniform* excellence to which you have attained, and to which thus far in our experience we have seen no exception.

Cordially yours,

A. L. STONE.

S. T. BACON, ESQ., President.

From Dio Lewis, M.D., Author of the Popular System of "New Gymnastics."

LEXINGTON, Jan. 29, 1866.

MY DEAR SIR, — For some time we have been using your Improved Aerated Bread in our large family of two hundred persons. As for years it has been both my pleasure and duty to study this article of food, I have watched with much interest the change from the bread we have been using for the last year or two, which we have thought to be very excellent, to your new bread. I am more than satisfied, and congratulate you upon your success in a vital work. I have frequently eaten Dr. Dauglish's bread in London, and have regretted that the aerated bread heretofore made in this country was so unlike the English article. The bread you are now making is quite equal to that made by the English manufacturers. I have made several analyses of your bread, and have used the tests for the foreign ingredients employed in bread, and find the article to be what you affirm, — entirely pure. The warm praise heard on every hand at our table, I am sure would gratify you. Some few who at first tasted daintily because of some unpleasant recollections of the aerated bread produced in Boston sometime ago, all join in expressions of satisfaction.

On behalf of the millions who within five years will daily use the Improved Aerated Bread, and most heartily on my own account, I thank you for your earnest and persevering efforts, which have at length resulted in a triumphant success.

I am, my dear sir, yours truly,

DIO LEWIS.

S. T. BACON, ESQ. President.

From D. Jay Browne, Esq., late U. S. Commissioner to Europe to investigate Food, Wines, &c.

BOSTON, March 8, 1866.

BOSTON WHEAT AND BREAD COMPANY. GENTLEMEN, — On numerous occasions I have witnessed the manufacture of bread at your establishment, and am familiar with all the materials used therefor; and I take pleasure in stating that for beauty and simplicity of process, cleanliness and order of working, wholesomeness and healthfulness of the product, and all other desirable properties, your bread is unsurpassed. I esteem it fortunate for our country, as it must also be to yourselves, that you have introduced into the United States Dr. Dauglish's English method of making the aerated bread. While house-keeping in London, about three years ago, my family used this bread, so largely manufactured by the London Aerated Bread Co. However, your method of generating the carbonic acid gas employed in its manufacture by the fermentation of molasses, grapes, and other fruits, is an improvement over that of the English, where the gas is generated the same as for soda water. Of your bread as a diet I cannot speak too flatteringly, for, being an invalid with feeble digestion, I have been able to eat this bread heartily without unfavorable results; and whenever its chemical nature was changed by toasting, it was extremely agreeable to the palate in all stages of disease.

Respectfully yours,

D. JAY BROWNE.

From John P. Jewett, Esq.

BOSTON, March 8, 1866.

S. T. BACON, ESQ., President. DEAR SIR, — You doubtless remember, that, soon after my return from Europe with my family, I called at your office to complain of your aerated bread, as compared with that which we had lived upon for nearly a year in London. I think you felt at the time that my criticisms were rather harsh; acting, however, in accordance with my advice, you went to London to see and taste for yourself, and, I presume, became thoroughly conversant with the new process (Dr. Dauglish's) for making the aerated bread. I judge so from the excellent quality of the bread you are now making, which is greatly superior in every respect to your former efforts. I am much pleased to learn that your untiring enterprise is being crowned with signal success.

Your friend,

JOHN P. JEWETT.

From Timothy D. Bond, Esq., the Manufacturer of probably the best Crackers in the world.

BOSTON, Jan. 12, 1866.

BOSTON WHEAT AND BREAD COMPANY. GENTLEMEN, — My familiarity with your manufacture of Dr. Dauglish's Improved Aerated Bread, and my desire to see the system generally adopted in the United States, incline me to give the expression of my opinion that no system of bread-making can be more neat, simple, economical, or healthful. So soon as its advantages are known, the rights for our cities and large towns will be taken up eagerly; for I believe this is *the* bread for the people.

Yours, &c.,

TIMOTHY D. BOND.

STATE HOUSE, BOSTON, Feb. 21, 1866.

BOSTON WHEAT AND BREAD COMPANY. *Gentlemen*, — Please accept my thanks for the generous loaf you were pleased to send me. Its proportions were so ample as to admit of several subdivisions, which were distributed among my friends in the State House — whose opinion of the bread may be found subjoined, and in which I fully coincide.

Very truly yours, &c.,

D. H. ROGERS.

STATE HOUSE, BOSTON, Feb. 21, 1866.

The undersigned, having been furnished with a piece of the *big loaf* from the Boston Wheat Bread Company, desire to express their admiration of its quality, and to say that, in their opinion, they have never eaten better bread manufactured at a public bakery. They cannot doubt that the public will appreciate the efforts of this company of bread-makers, whenever the article is placed within their reach.

ANSON P. HOOKER, M.D.
H. KEMBLE OLIVER.
W. D. HOLDEN.
A. HARMON.
JOSHUA PHIPPEN.
D. WILDER, JR.
S. B. SMITH.
SAMUEL C. OLIVER.
JULIUS L. CLARKE.
T. E. BAKER.
H. K. OLIVER.

For the report of the Committee on Bread, appointed by the Massachusetts Charitable Mechanic Association, see last page of cover.

OPINIONS OF THE PRESS.

The necessarily limited space of a pamphlet like this renders it impossible to spread at length before the public, in its pages, the various flattering opinions of the Press, both of Great Britain and this country, in regard to this bread. Flattering articles have approved in the London "Times," "Review" "News," "Sun," "Star," "Mechanics' Magazine," "Once a Week," "St. James's Magazine," the "Birmingham Post," "Liverpool Courier," &c., &c. The following expression of transatlantic approval of Dr. Dauglish's invention, taken from that well-known medical journal, the London "Lancet," of Dec. 10, 1864, should be read by all. The article is from the pen of T. F. Sanger, Esq., M. R. C. S., Surgeon of the Convalescent Hospital, and its substantial portions are as follows: —

"Bread made in the usual way, with yeast or leaven, has the first principles of fermentation, decomposition, and putrescence commenced in it, and, when taken into a stomach in which from disease or the weakness of infancy, the gastric juices are not sufficiently powerful to arrest the fermentative process, it becomes a source of discomfort, flatulence, diarrhœa, &c. On the contrary, the Aerated Bread, being vesiculated or lightened by the mechanical action of the fixed air, or carbonic acid gas, has none of the putrefactive elements in its composition. It is therefore easily digested and assimilated, and may even be eaten quite new by the dyspeptic, without feeling any of the discomfort which new leavened bread generally produces on all but the most vigorous stomachs.

I have a patient who has suffered from indigestion for some years, and whose great difficulty in diet was her bread, as she could only eat home-baked bread after it had been made three or four days. She could not tolerate bakers' bread, and, when on a visit to London, used to have her bread sent from the country. This lady can eat the Aerated Bread new without any discomfort: in fact, it digests better than the home-made, and she has a box sent her every week from London.

The Aerated Bread has a like salutary effect on infants, where they are obliged to be brought up wholly or partially by hand. I have seen children pining away from diarrhœa and atrophy, under a diet of common pap, or *tout les mois*, or any of the compounds which are vaunted as wonderful foods for infants, recover in a very short time after the Aerated Bread has been substituted for them. A few days since, a lady informed me that her child, who had been fed for months with the Aerated Bread, and had during that time enjoyed uninterrupted good health, was, during a visit from home, obliged to have fermented bread. Diarrhœa and sickness was the consequence, which only abated on the child's return to his Aerated Bread diet.

This bread forms a soft, jelly-like compound when mixed with milk and water, which is easily sucked through the tube of a common feeding-bottle, and, with a little sugar, makes a food of which infants grow very fond.

Dr. Corfee, of the Middlesex Hospital, informs me that since he has been able to procure Aerated Bread for his patients, he has found those cases of dyspepsia which so often affect the brain-workers of the great metropolis, — men who work for the press, &c., — more amenable to treatment than when they were compelled to eat leavened bread, most of it containing alum, without which the bakers cannot make their loaves and rolls white enough for the London market.

The managers of our hospitals, barracks, and union-houses, would find that, by introducing the Aerated Bread as an article of diet into those institutions, they would more quickly restore the sick to convalescence, and more permanently retain the vigor of the healthy."

The report presented to Parliament by Mr. Tremenheere, the commissioner appointed by the Home Office to inquire into the "grievances complained of by the journeyman bakers," calls attention to the great importance of Dr. Dauglish's process. Thus,

"The new method of bread-making substitutes machinery for hand-labor. The dough is distended by mechanical means; an operation which can be conducted on a large scale with perfect regularity, certainty, and rapidity; waste and deterioration being entirely avoided, and the most perfect cleanliness secured, as the flour passes from the sack into the baked loaf without being once touched by the hand. The long hours and exhausting night work of the operative bakers are rendered unnecessary, and all the other evils of the trade are entirely remedied."

"One of the witnesses brought before Mr. Tremenheere, speaking of the copious perspiration flowing from the face and arms, and dropping into the dough and being incorporated with the bread, says 'Plenty of it,' &c.

"Another witness says, 'After the dough is made, the journeymen first rub their arms out, i.e., get off all the dough they can by rubbing, and using dry flour to get off what adheres; after that they work off the rest in a pail. If they are not looked after they will throw this water away; *but a careful master keeps it, and compels them to use it in the next batch*, with the rest of the water used in making the dough." Item, as old Pepys would say, Beware of the 'careful' master-baker.

Extract from "The Hygiene of Bread," by Harry William Lobb, M. R. C. S. E., &c., London.

"I have taken some trouble to ascertain the opinions held by our profession on the subject of bread, and I have been somewhat surprised to find that the great majority of those I have questioned have, like myself, discontinued the use of fermented, eating some form of unfermented bread. Many of these gentlemen are unwilling that their names should appear, but I may say that some of the highest and most honored are amongst them."

Extract from the "St. James's Magazine," London.

"After all this demonstrative evidence, what is to be said in favor of hand-made bread? We have shown that it is a filthy process; we have shown that it is an unhealthy process; we have shown that it is not an economical process; whereas, on the contrary, manufactured bread possesses all these three virtues."

From the American Press we reproduce portions of articles which recently appeared in the editorial columns of the "Boston Daily Advertiser," "Courier," "Transcript," and "Commercial Bulletin."

From the "Boston Daily Advertiser," Jan. 3, 1866.

IMPROVED AERATED BREAD. — Several years ago, as a large portion of our readers will remember, the manufacture of what was called aerated bread was begun in most of the large cities of the country. In Boston, a large building was erected on the corner of Washington and Concord Streets expressly for the purpose, and fitted out with elaborate and costly machinery. The bread had been only a short time in the market when the public discovered, that, however faultless might be the theory of the invention, the bread was certainly not good. Improvements of various kinds were suggested and tried, but all to no effect; and, after a great deal of time and money had been spent, it had to be acknowledged that the invention from which so much was hoped was chemically and mechanically a practical failure. In one city after another, in rapid succession, the project was abandoned: those who had engaged in the scheme were left to pocket their losses, and the public returned to the old yeast-fermented loaves, with all their manifest imperfections.

Mr. Steuben T. Bacon, the chief mover in and therefore the largest loser by the project in this city, heard from unquestionable sources, that, in England, after the same difficulties found here had been encountered and overcome, the manufacture of aerated bread had proved a success financially and chemically. He at once crossed the Atlantic to investigate the matter, and found, that, not only was good bread made to the satisfaction of the public and the profit of the manufacturers, but that the machinery used was infinitely cheaper, smaller, lighter, and better in every way than the cumbrous and costly apparatus with which the American experiment had been made. He at once purchased the right to use the new system, known as Dr. Dauglish's, in this country, took out an American patent on it, and brought over one of the English machines from which to pattern in the manufacture of more.

A company was immediately formed under the title of the "Boston Wheat and Bread Company," for the manufacture alike of the improved aerated bread and of the machinery to produce it, and for the sale of rights for all parts of the United States. Of this company, the authorized capital stock of which is $500,000, Mr. Steuben T. Bacon is president, and Mr. Chas. S. Belcher, treasurer, and Hon. William Sprague, United-States Senator from Rhode Island, is one of the directors. The building No. 1010 Washington, corner of Concord Street, was purchased, and the manufacture of bread commenced in May last. The machinery has run to perfection, the bread so quietly made has become popular, and has stood every test, and been unanimously pronounced to be delicious, wholesome, and in every way of unexceptionable character. The company are rapidly enlarging their facilities for making bread, and are ready to negotiate for the sale of patent rights, and of the new and improved machinery.

It would not be possible in a notice like this to enter into a detailed description of the process of making bread, and a very brief sketch must suffice. It is perhaps well known that the only ingredients in the manufacture of the aerated bread are flour, water, and salt. The bread is raised by passing through these, pure carbonic acid gas, which is generated in the basement of the building by the union of molasses and water, in three cisterns holding a thousand gallons each. The residuum, after the creation of the gas, is sold for the manufacture of vinegar and for other purposes, so that the gas is produced at little or no expense. From the three cisterns (which are supplied with molasses and water at a proper temperature by an ingenious apparatus which we have not space to describe), the gas is carried through pipes to a large receiver, where it is kept for use and whence it is pumped by the Dauglish machine which we shall refer to hereafter.

In the second story of the building, the flour is emptied from the barrels (it being found productive of the best results to mix flour of different brands together), and thoroughly sifted by machinery. It is carried by little cups running on an endless belt, into a funnel-shaped wagon running on a little railway. While here the proper proportion of salt is placed upon it, and the whole is emptied into the mixer of the Dauglish machine which stands on the first floor.

The new apparatus, which takes up only a little space and weighs less than one of the supporters of the old machine, is run by a little engine no larger than a gallon measure, while the old system required a large engine of thirty-horse power. This little engine operates four very ingenious pumps connected with the mixer in which the flour, water, and salt are placed. The first sucks away the air, and produces a vacuum; the second forces in the carbonic-acid gas, which aerates or raises the dough; the third returns the surplus gas; and the fourth compresses air for use in the drawing-off apparatus. While in the mixer, the dough is kneaded by a beating apparatus somewhat similar to that in a churn, but a great improvement on that used in the former experiment. It is ejected from here, and, by a very simple contrivance not easily described, cut into lumps of the proper size, and placed in pans, which are put in the ovens on revolving platforms, by means of which the heat is equally distributed. In less than an hour from the time the flour is taken from the barrels, it is shovelled from the oven baked bread, and placed on large tables, perforated to allow the circulation of air, to cool. From these tables it is placed by hand in the baskets of the distributing agents, — being the first time it has been touched either as flour, dough, or loaves, by the human hand from the time it was barrelled up at the flour mill. The present capacity of the manufactory is a thousand loaves of bread an hour, the work beginning in the evening. In the daytime another set of hands is employed in making crackers, by the familiar system, in the same ovens used for the aerated bread. The capacity of the company will soon be increased by the introduction of additional machinery.

From the "Evening Courier," Aug. 18, 1865.

THE STAFF OF LIFE. — People who live in cities, and still more their friends from the country, find continual fault with bakers' bread. It is unsubstantial, ill-tasted, and indigestible. Such is the general verdict. Everybody prefers home-made bread, when they can get it made by somebody who knows how to do it; but these somebodies are scarce, and getting scarcer. In spite of satirists and the newspapers, women grow less rather than more domestic, and (perhaps in consequence) servants daily more incompetent. A few attempts at having bread made at home generally satisfy the men of a family that, good as home-made bread *may* be, and bad as the purchased article is, the latter offers, as a rule, the lesser of two evils.

Did the reader ever visit a bakery in work time, particularly in hot weather? If so, we insure he was convinced, that, whether we citizens eat our bread in the sweat of our brows or not, we certainly eat the sweat of other men's brows and bodies in our bread.

This is a disgusting fact, and true as it is we will not dwell on it. What we want to call attention to is the fact that science and ingenuity have combined to give us an article of bread, now for sale in any quantity to the people of Boston, of a quality equal to the best home-made, and actually free from any possibility of contamination.

We refer to the bread now manufactured by the Boston Wheat and Bread Company, and known as "Improved Aerated Bread." An unsuccessful attempt was made a few years ago to introduce a bread of this sort, which failed, owing to the defects in the process which gave a peculiar taste to the loaf. This was under an American patent. The present establishment is conducted under the far better, more scientific, and entirely successful process invented in England by Dr. Dauglish. This process, which has excited great attention among economists and scientific men in Europe, and has been made the subject of a Parliamentary report, is now in successful and extensive use in all the principal English cities. We will briefly explain it.

Bread is essentially a mixture of flour, water, and salt, subjected to a baking heat. But the mixture, in order to become good bread, must in some way be made light and porous. This is effected by several methods. The oldest and most common consists in setting up fermentation of the bread itself by the introduction of a portion of yeast or ferment. Under the action of this, a portion of the flour is decomposed, and one of the products of its decomposition, carbonic-acid gas, permeates the bread in all parts, imparting the required porosity or "lightness." Another method is to produce the carbonic acid, not by fermentation of the bread itself, but by the effervescence of an alkaline carbonate (usually carbonate of soda or potash), with an acid. This is effected in the ordinary way by the use of "yeast powders," which are a mixture of the alkaline and acid constituents in a dry form, ready to effervesce when moistened. Still another method — that adopted by the Boston Wheat and Bread Company — is by the fermentation of molasses in a separate vessel. The carbonic-acid gas produced in either case is identically the same thing as that which causes the sparkle and froth of champagne or soda water. None of it is left in the loaf when it comes from the oven; but the cavities formed by its bubbles in the dough constitute the lightness of the bread.

Yeast bread is the kind made by the bakers. But to mix the flour thoroughly, and temper the dough so that it shall produce a uniform, even, and very unsubstantial loaf, kneading is required; and this, as usually conducted, is a hard manual process, requiring prolonged contact of the operative's hands and arms, and sometimes feet, to effect it.

Dr. Dauglish's process is a very simple one, very easily and quickly per-

formed, unvarying in its results, and, from the barrel to the delivery, no element of the bread is touched by the human hand. The flour, water, and salt are introduced into a close receiver, in which an armed shaft which mixes them together is operated by machinery. The carbonic-acid gas for lightening the bread is forced by an air-pump into the receiver which contains the dough. After being thoroughly mixed, which requires but a few minutes' action of the machinery, the dough is delivered through an opening in the receiver to an automatic attachment, which weighs each loaf, cuts it, and deposits it in the pan, and delivers it to the oven ready for baking.

We have used this aerated bread now for several months, and find it excellent to the taste, admirably white and pure, and continually mistaken by friends for home-made. Unlike the baker's loaf, it keeps well for several days, and is really better the second day than the first. It is perfectly uniform in quality, and as none but the best flour can be used in the process it is evident that this must always be the case. We hardly think an article which can be so easily tried requires higher or more extended praise, but advise our readers to test it for themselves.

From the "Evening Transcript," Dec. 30, 1865.

Bread Making by Machinery. — The difficult problem of manufacturing the "staff of life" by machinery, so that it shall successfully undergo the test of all degrees of temperature, has been finally solved both in England and this country. S. T. Bacon, President of the "Boston Wheat and Bread Company," as the principal manager of the Boston Aerated Bread Company in 1862, projected and erected the large brick building, No. 1010 Washington Street, with the view of fully trying the experiment of applying machinery to bread-making. In the course of these efforts, a large amount of money was expended in order to obtain the most advantageous use of the mechanical contrivance known as the American patent.

Contemporaneous with the starting of the Boston Company nearly four years ago, an Aerated Bread Company was established in London, with a capital of £500,000, which employed Dr. Dauglish's system of machinery. Such has been the success of these labor-saving instruments, that twenty-one bakeries are now in operation to supply the demand for this bread in the great English metropolis; while other companies have been instituted in the provincial cities of Great Britain, and nineteen bakeries turn out excellent loaves made in the same way in different parts of the British Empire.

The introduction of the Dauglish patent into this country was made last July, and the sole and exclusive right to manufacture bread by that method in the United States is owned by the "Boston Wheat and Bread Company." These English machines produce the results to be gained with marvellous rapidity, with a trifling expenditure of power and labor, and by utilizing all the salutary materials at hand. The instruments, singularly adapted for the purposes for which they are designed, are compact, free from the criticism of being too cumbersome, and, having been constructed on thoroughly scientific principles, systematically work out the same promising effects. Hardly a chance of loss of bread exists, because of changes in temperature of the atmosphere. The great and constant rule is that light, palatable, and sweet bread comes forth from the machines as an inevitable product. The cost of a single machine, with all the indoor apparatus necessary for the manufacture of bread, is only about $7,000, — not quite one-half the expenditure required to obtain other machinery now in limited use for bread-manufacturing in the United States.

In examining the English system, even the inexperienced eye cannot fail to notice the wonderful manner in which the inventor has simplified former complex styles, dispensing with an immense mass of extraneous mechanism, until the improved machinery can be driven by an engine of four-horse power. The advantage thus gained in compactness and economy cannot well be overestimated. Throughout, the superiority of Dauglish's patent has approved itself by the certain test of actual *trial*, and his method will be speedily adopted wherever bread is manufactured.

A visit to the premises of the "Boston Wheat and Bread Company" will convince the most doubting of the superiority of the English invention, and create astonishment at the completeness of the arrangements of this corporation for the business undertaken. The coal to supply the furnaces, and the flour from which to manufacture the bread, are carted directly into the basement of the building on Concord street. The anthracite drops down into the bunkers in the cellar, close to the furnaces, while the flour is carried by an elevator into the sifting apartment on the second floor.

After the mixing of the ingredients to compose the bread, the bottom of the globe slides out, and the paste which has been formed — at this time almost as heavy as lead — slips down into another vessel below. Into this is inserted a tube containing sections cut in it just the size of the desired loaf. The heavy, clammy substance is drawn out through an air-tight passage, and the moment the material reaches the outer-atmosphere the carbonic acid gas suffusing the mass, seeks to escape, puffing up the dough until every portion becomes equally light and porous. It is then immediately put into the ovens and baked. One important fact should be here marked. From the time the flour is taken from the barrels, until the loaves, baked, are transferred to the structures built for their distribution, the intervention of human hands is entirely superseded, so that absolute cleanliness is insured throughout the whole process of manufacture.

The carbonic acid gas employed as the substitute for yeast is generated by the fermentation of molasses and water; and the various instrumentalities by which it is secured form the subject of a patent. The residuum of molasses and water, after the gas has been evolved, is sold to the vinegar-maker, who is eager to pay for the liquid a sufficient amount to render the production of the gas a matter of very little if any expense. By employing this aeriform fluid, the manufacturer escapes the necessity of working into the flour the foulness sometimes existing in yeast.

The bread produced by the process of which we have been speaking is uniformly light, remarkably sweet, retains its moisture for a long time, and is really a healthy article of food. These facts large numbers of families in this city have discovered much to their own gratification. The loaves furnish a cheap, agreeable, satisfying, and salutary aliment for the community. Ten thousand of them are baked daily, and the demand increases. No complaint is heard from any quarter. Indeed, every indication at present points to a rapid absorption of the business of bread-making, in all the large cities, by those having the right to use Dauglish's patent machine.

The "Boston Wheat and Bread Company" is prepared to sell the Dauglish machines, set them in running order, and also to furnish all the necessary outfit for bread-making. With the mechanism requisite for the manufacture in which the corporation is concerned, must also be purchased the right to avail of the great benefits of the Dauglish system. Those engaged in providing "food for the million," in any part of the country, will not fail to note the composition of the company which thus proposes to introduce a new method of manufacturing bread in the United States. Its list of officers is abundant guaranty that it will fully meet all its promises. The Board of Management consists of persons who need no introduction to the American people.

From the "Commercial Bulletin," Jan. 6, 1866.

OUR DAILY BREAD. — The tendency of all manufacturing is toward the creation of large establishments, the perfection of machinery for the performance of details, and the division and simplification of labor.

One branch of manufacture, however, ranking among the very first in extent and importance, has as yet been maintained upon the system of the Middle Ages. The baker of to-day performs the operations of his trade substantially in the same way as his predecessor of two centuries ago. Some machinery has been introduced into the business, but chiefly for the production of special descriptions of bread. The family loaf continues to undergo, in the baker's shop, the same manipulations as of old. What these are is pretty well known. The manner of them is less known, and this is fortunate for those who are compelled to subsist upon their products. That coarse and often filthy laborers, careless and gross in their habits, mix, knead, and handle our daily bread in every stage of its manufacture, must be known to most people, although they may voluntarily avoid reflection upon a matter from the consequences of which there has been, heretofore, no escape.

Change from this condition of things can only be looked for through the introduction of machinery, and the development of the bread-manufacture on a large scale, under a new system; and we now believe that the production of family bread by machinery in Boston is really a success. Different systems of machinery applied to bread-making have been tried; but the one destined to succeed — indeed, the one which in England is already established on the most extensive scale — is the simple yet most ingenious and scientific one of Dr. Dauglish. This has been put in operation by the Boston Wheat and Bread Company, at their extensive works at the South End, where large quantities of the most wholesome and palatable bread is daily produced.

Where it is so easy for every one to test a manufacture for himself, praise is superfluous. No space need be occupied in expatiating upon the qualities of this "Improved Aerated Bread," as it is called. It is too important a fact to pass without notice, that it is so entirely the product of mechanism that no hand touches it from the opening of the flour barrels to the delivery of loaves from the ovens. Sifting, mixing, kneading, raising, dividing into loaves, weighing, and baking, are all performed by a connected series of automatic machinery. Indeed, it is all done in air-tight chambers, entirely protected from the least possibility of contamination. Nothing but the purest flour, salt, and water, enters into the composition of the bread. By the use of fixed air (carbonic acid gas), produced by the fermentation of molasses, yeast is dispensed with, and an entirely pure and uniform result is secured.

The superiority in point of purity and healthiness is testified to by our leading chemists and physicians, and the rapid extension of its consumption testifies to its acceptability with the public. It only needs to be generally known to be generally adopted.

Besides the manufacture of this bread, the Wheat and Bread Company, possessing the right for the manufacture of the machinery for bread-making under the Dauglish patent, propose to engage in that business extensively, and will soon be prepared to establish branches in other cities, and to dispose of machines and rights upon the most favorable terms. Some of the strongest capitalists in the country (among others Senator Sprague of Rhode Island) are connected with this enterprise, and to their energy and perseverance will in all probability be due the successful application of machinery on a large scale to this great and important business. Other important features in preparing and grinding wheat are also a part of their programme, so that it may be said that the company embraces in its designs the whole scope of one of the most extensive, as it is most important, of the great businesses of the country. Their entire success in remodelling it with such great improvements will be cause for general congratulation.

WHOLE MEAL BREAD.

Brown Bread (commonly called, in the United States, Graham Bread), made from whole meal, is as easily produced by Dr. Dauglish's aerating process as white bread.

The most eminent chemists and physicians agree in recommending the wholesome properties of this brown bread. In Johnston's "Chemistry of Common Life," it is spoken of as eminently nutritious and salutary. All hygienists and physiologists commend its healthful properties. Dr. Prout, an eminent writer on food, and Dr. Pereira, author of the well-known work on "Materia Medica," especially testify to its utility in those forms of indigestion which are accompanied by constipation. Dr. Prout, after speaking of it as a remedy the efficacy of which has long been known and admitted, expresses his surprise that the generality of mankind choose to consult their taste rather than their reason, and thus, by officiously separating what nature has beneficently combined, entail upon themselves much discomfort and misery. According to Dr. Headland, author of the work on the "Action of Medicines," "Medical Hand-book," &c., it is more nutritive, not only by being more digestible, but by containing more of the elements of the body, which are shown to exist in this bread in the proportion of seventeen to twelve, as compared with white bread. The preference given to white bread over that in which the husk or outer portion of the wheat is ground, is, in the opinion of this physician, one of the matters in which the world has gone grievously wrong.

The Aerated Brown Bread is very acceptable to many, being often preferred to bread of fine flour. Those who do not care to use it habitually are often pleased with it as an occasional change; and many families are unwilling to be without it.

Those among the public who would be glad to have the Aerated Brown Bread would do us a favor, and contribute to their own gratification, by mentioning the wish to the grocer or agent of whom they purchase our white bread.

It is necessary, with our machinery, that we have sale for at least a thousand loaves daily; and, so soon as we find a demand to that extent, we shall commence its manufacture, using, as in our white bread, only the best materials.

Relying upon the appreciation of the public, we can thus present it with an article as superior to the ordinary Graham Bread of the bakers as can well be imagined, containing no elements of fermentation or acidity, but entirely pure, wholesome, and sweet.

A CARD.

BOND'S CRACKER DEPOT, 12 CANAL ST.,
BOSTON, March 1, 1866.

Being satisfied of the peculiar excellence of the Improved Aerated Bread as manufactured by the Boston Wheat and Bread Company, and of the many advantages to be attained by a union of the manufacture of my crackers with this bread, I beg leave to inform my friends and patrons that I have this day sold the good-will of my cracker business to the above Company, the two manufactures being merged into one, under the name and style of the Boston Wheat and Bread Company.

I can be found as heretofore at my old stand, which has been taken as a branch office and store by the above company, and from ten to twelve o'clock at the manufactory, 1010 Washington Street. As a partial return for past favors, it shall be my endeavor in the future to improve the quality, both of the bread and crackers, if such can be done.

Respectfully,

TIMOTHY D. BOND.

The increasing demand for Dr. DAUGLISH'S IMPROVED AERATED BREAD, in Boston, has induced the Company to enlarge its facilities of supply; and we expect, by May, to be able to manufacture thirty thousand loaves of bread, and one hundred barrels of crackers daily.

The medium through which the bread is delivered to consumers is the grocer chiefly (although not all grocers sell bread); also bread-stores that are independent of the baker. Therefore, families desiring this bread have only to call upon their grocer until he concludes to keep a supply of it. The company deliver the bread daily, wholesale, to Grocers, Independent Bread-stores, Hospitals, Public Institutions, Hotels, Boarding Houses, Restaurants, &c., in Boston and its immediate vicinity. (See remarks on Whole Meal Bread, page 23.)

At the manufactory, corner of Washington and Concord Streets, can be had, wholesale and retail, Bread, Crackers of all kinds, and Cake.

At the Branch-Store, 12 Canal, and 10 Merrimac Streets, Haymarket Square, can be had, wholesale, Crackers of all kinds, in any quantity, for shipping or otherwise, at the lowest cash prices.

APRIL 16, 1866.

By the improvements of Dr. Dauglish (the patents for which are owned by this Company), the quantity of carbonic acid gas used is reduced to *thirty* pounds on the square inch, which prevents the sudden expansion of the dough, expedites the working of the process, secures perfect uniformity of results, and the bread produced is immensely improved in texture, flavor, and appearance; the top of the loaf is smooth, and the crust thin.

Heretofore, also, the mixing apparatus had to remain idle while the operation of forming the loaves was being performed; and, *vice versâ*, the apparatus for forming the loaves had to remain idle while the mixing of the dough was being performed. We avoid much of this delay by attaching to the mixer (B) a receiver (C), into which the dough may be discharged in bulk. Attached to this receiver is an ingenious automatic apparatus (D), which, being operated conjointly with air from column (E), vesiculates and forms the dough into the requisite, exact, and uniform quantities for loaves; thus doing away with the troublesome operation of weighing each loaf separately.

The carbonic acid gas — the same air which gives life to soda-water, champagne, and all sparkling wines — is liberated from molasses, grapes, and other fruits, its purest source, and is conveyed from the generators (G) to the receiver (H), from whence it is pumped into vessel (A) to aerate the water; the aerated water passes into mixer (B), and is incorporated with the flour and salt by kneading fans; the dough then passes into receiver (C), and from thence (as described) to the oven as quickly as possible, for in a few seconds the whole of the air or carbonic acid gas passes off.

The large reduction in the amount of carbonic acid gas used (from one hundred and eighty pounds down to thirty pounds pressure on the square inch) is not only a great economy in itself; but the strength and first cost of the machinery required is thereby materially reduced, and much power and fuel are saved. The new machinery is also well adapted to limited space.

The principal promoter of this enterprise, Mr. S. T. Bacon, designed and erected the building occupied by this Company, a view of which is shown on the cover. He has visited many bakeries in this and foreign countries, and hazards nothing in asserting this to be the finest and best adapted in the world.

It is believed, that by means of the alterations in the machinery used in the manufacture of Aerated Bread, and the many important results derived from them both as regards improvement in quality, and simplicity and economy in manufacture, the only obstacles remaining to its general consumption by all classes have been removed, and that the universal substitution of bread made by the system of Dr. Dauglish for the ordinary fermented bread is now merely a question of time.

BOSTON WHEAT & BREAD COMPANY,

MANUFACTURERS OF

Household, Paris, & Cottage Bread,

AND

BREAD MACHINERY,

UNDER

DR. DAUGLISH'S ENGLISH SYSTEM AND PATENTS.

ALSO THE

WORLD-RENOWNED T. D. BOND CRACKER.

Chemical Judges' Report on Bread at the Exhibition of the "Massachusetts Charitable Mechanic Association," Boston, 1865.

"No. 622. Boston Wheat and Bread Co. — Bread. — This Bread, as exhibited, is pure flour, salt, and water; the loaves are of good weight, well baked, white, of fine texture, wholesome, and quite palatable. The bakery of this Company has been repeatedly visited by the members of the Committee: the good quality of flour, and extreme cleanliness there were noticeable, while the mode of manufacture and kneading insures uniformity. By a large investment of capital, this Company are enabled to provide this all-important article to the million; it is suitable for the first table in the country, and at the same time is cheaper for the poorest laborer than any other bread. Contending against great difficulties, this Company have wrought a wonderful improvement upon their earlier productions, and fully merit a Silver Medal.

A. T. Stimson, S. D. Hayes, A. S. Bird, *Judges.*"

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